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REVISED LIST OF NEW ENGLAND HEPATICAE.

ALEXANDER W. EVANS.

ABOUT ten years ago the writer published a preliminary list of New England Hepaticae.¹ In this list 123 species were reported, 75 being accredited to Maine, 81 to New Hampshire, 67 to Vermont, 76 to Massachusetts, 65 to Rhode Island, and 94 to Connecticut; while 31 species were noted from all six of the New England states. Since the publication of this list the study of the New England Hepaticae has continued, many additional species have been brought to light, certain species already recognized as members of the flora have been more narrowly circumscribed, while certain other species have been reduced to synonymy. The writer has attempted to call attention to these various additions and changes in a series of "Notes on New England Hepaticae," published in this journal. The introductory number of this series, dating from November, 1902 (4: 207-213), had already appeared before the publication of the preliminary list. The second number was published in August and September, 1904 (6: 165-174, 185-191, *pl.* 57); the third in March, 1905 (7: 52-58); the fourth in February, 1906 (8: 34-45); the fifth in March and April, 1907 (9: 56-60, 65-73, *pl.* 73); the sixth in October, 1908 (10: 185-193); the seventh in October, 1909 (11: 185-195); the eighth in October, 1910 (12: 193-204); the ninth in January, 1912 (14: 1-18); and the tenth in November, 1912 (14: 209-225). Much of the information to be found in these Notes is now incorporated in the following revised list. As in the preliminary list the sign + indicates that an herbarium specimen has been seen, the sign - that a printed record has been found.

¹ Preliminary Lists of New England Plants,— XI, Hepaticae. RHODORA 5: 170-173. 1903.

RICCIACEAE.

	Me.	N. H.	Vt.	Mass.	R. I.	Conn.
<i>Riccia arvensis</i> Aust.					—	+
“ <i>Austini</i> Steph.					—	+
“ <i>dictyospora</i> M. A. Howe						+
“ <i>hirta</i> Aust.						+
“ <i>Lescuriana</i> Aust.						+
“ <i>sorocarpa</i> Bisch.						+
<i>Ricciella crystallina</i> (L.) Warnst.						+
“ <i>fluitans</i> (L.) A. Br.	+	+	+	+	+	+
“ <i>membranacea</i> (Lindenb. & Gottsche) Evans						+
“ <i>Sullivantii</i> (Aust.) Evans	+	+	+	+	+	+
<i>Ricciocarpus natans</i> (L.) Corda	+	+	+	+	+	+

MARCHANTACEAE.

	Me.	N. H.	Vt.	Mass.	R. I.	Conn.
<i>Asterella tenella</i> (L.) Beauv.	+	+	+	+	+	+
<i>Conocephalum conicum</i> (L.) Dumort.	+	+	+	+	+	+
<i>Grimaldia fragrans</i> (Balb.) Corda			+	—	+	+
<i>Lunularia cruciata</i> (L.) Dumort.			+	+	+	+
<i>Marchantia polymorpha</i> L.	+	+	+	+	+	+
<i>Neesiella pilosa</i> (Hornem.) Schiffn.			+			
<i>Preissia quadrata</i> (Scop.) Nees	+	+	+	+	+	+
<i>Reboulia hemisphaerica</i> (L.) Raddi	+	+	+	+	+	+

METZGERIACEAE.

	Me.	N. H.	Vt.	Mass.	R. I.	Conn.
<i>Blasia pusilla</i> L.	+	+	+	+	+	+
<i>Fossombronina foveolata</i> Lindb.	+	+		+	+	+
“ <i>salina</i> Lindb.					—	+
“ <i>Wondraczekii</i> (Corda) Dumort.		+	+	+		+
<i>Metzgeria conjugata</i> Lindb.	+	+	+	+	—	+
“ <i>crassipilis</i> (Lindb.) Evans			+	+		+
“ <i>furcata</i> (L.) Dumort.	+	+	+			+
“ <i>pubescens</i> (Schrank) Raddi		+	+			
<i>Pallavicinia Flotowiana</i> (Nees) Lindb.	+			+		
“ <i>Lyellii</i> (Hook.) S. F. Gray	+	+	+	+	+	+
<i>Pellia epiphylla</i> (L.) Corda	+	+	+	+	+	+
“ <i>Fabroniana</i> Raddi			+			+
“ <i>Neesiana</i> (Gottsche) Limpr.	+	+				+
<i>Riccardia latifrons</i> Lindb.	+	+	+	+		+
“ <i>multifida</i> (L.) S. F. Gray	+	+		+	—	+
“ <i>palmata</i> (Hedw.) Carruth.	+	+		—	—	+
“ <i>punguis</i> (L.) S. F. Gray	+	+	+		+	+
“ <i>sinuata</i> (Dicks.) Trevis.				+	+	+

JUNGERMANNIACEAE.

	Me.	N. H.	Vt.	Mass.	R. I.	Conn.
<i>Anthelia Juratzkana</i> (Limpr.) Trevis.		+				
<i>Bazzania tricenata</i> (Wahl.) Trevis.	+	+	+	+		+
“ <i>trilobata</i> (L.) S. F. Gray	+	+	+	+	+	+
<i>Blepharostoma trichophyllum</i> (L.) Dumort.	+	+	+	+		+
<i>Calypogeia Neesiana</i> (Massal. & Carest.) C. Müll.	+	+	+	+		+
“ <i>sphagnicola</i> (Arn. & Perss.) Warnst. & Loeske			+			+
“ <i>suecica</i> (Arn. & Perss.) C. Müll.	+	+				+
“ <i>Sullivantii</i> Aust.				+	+	+
“ <i>tenuis</i> (Aust.) Evans	+	+	+	+	+	+
“ <i>Trichomanis</i> (L.) Corda	+	+	+	+	+	+
<i>Cephalozia bicuspidata</i> (L.) Dumort.	+	+	+	+		+
“ <i>connivens</i> (Dicks.) Lindb.	+	+	+	+	+	+
“ <i>curvifolia</i> (Dicks.) Dumort.	+	+	+	+	—	+
“ <i>fluitans</i> (Nees) Spruce	+	+	+		+	+
“ <i>Francisci</i> (Hook.) Dumort.	+					
“ <i>Macounii</i> Aust.	+	+				
“ <i>media</i> Lindb.	+	+	+	+	+	+
“ <i>pleniceps</i> (Aust.) Lindb.	+	+	+			
“ <i>serriflora</i> Lindb.	+	+	+	+	—	+
<i>Cephaloziella bifida</i> (Schreb.) Schiffn.				+		+
“ <i>byssacea</i> (Roth) Warnst.		+		+		+
“ <i>elachista</i> (Jack) Schiffn.	+	+	+	+	+	+
“ <i>Hampeana</i> (Nees) Schiffn.	+	+	+	+		+
“ <i>myriantha</i> (Lindb.) Schiffn.	+	+	+	+	+	+
“ <i>papillosa</i> (Douin) Schiffn.				+		+
“ <i>Sullivantii</i> (Aust.) Evans		+		+		
<i>Chiloscyphus fragilis</i> (Roth) Schiffn.	+	+		+		+
“ <i>pallescens</i> (Ehrh.) Dumort.	+	+		+	—	+
“ <i>polyanthus</i> (L.) Corda	+	—	—	—	—	+
“ <i>rivularis</i> (Schrad.) Loeske		+	+	+	+	+
<i>Cololejeunea Biddlecomiae</i> (Aust.) Evans	+	+	+	+	—	+
<i>Diplophyllia albicans</i> (L.) Trevis.	+					
“ <i>apiculata</i> Evans	+			+	+	+
“ <i>taxifolia</i> (Wahl.) Trevis.	+	+	+	+		+
<i>Frullania Asagrayana</i> Mont.	+	+	+	+	+	+
“ <i>Brittoniae</i> Evans	+	+	+	+	+	+
“ <i>eboracensis</i> Gottsche	+	+	+	+	+	+
“ <i>inflata</i> Gottsche						+
“ <i>Oakesiana</i> Aust.	+	+	+			
“ <i>plana</i> Sulliv.					—	+
“ <i>riparia</i> Hampe	+	+	—			+

	Me.	N. H.	Vt.	Mass.	R. I.	Conn.
<i>Frullania saxicola</i> Aust.						+
“ <i>Selwyniana</i> Pears.	+					
“ <i>squarrosa</i> (R. Bl. & N.) Dumort.					—	+
“ <i>Tamarisci</i> (L.) Dumort.	+			+		+
<i>Geocalyx graveolens</i> (Schrad.) Nees	+	+	+	+	+	+
<i>Gymnomitrium concinnatum</i> (Lightf.) Corda	+	+				
“ <i>corallioides</i> Nees		+				
<i>Harpanthus scutatus</i> (Web. f. & Mohr) Spruce	+	+	+	+	—	+
<i>Jamesoniella autumnalis</i> (DC.) Steph.	+	+	+	+	+	+
<i>Jubula pennsylvanica</i> (Steph.) Evans	+	+	+	+	—	+
<i>Jungermannia cordifolia</i> Hook.		+				+
“ <i>lanceolata</i> L.	+	+	+	+	—	+
“ <i>pumila</i> With.	+	+	+	+	—	+
“ <i>sphaerocarpa</i> Hook.		+				
<i>Lejeunea cavifolia</i> (Ehrh.) Lindb.	+	+	+	+	—	+
<i>Leucolejeunea clypeata</i> (Schwein.) Evans		+		+		+
“ <i>unciloba</i> (Lindenb.) Evans					+	
<i>Lepidozia reptans</i> (L.) Dumort.	+	+	+	+	+	+
“ <i>setacea</i> (Web.) Mitt.	+	+	+	+		+
“ <i>sylvatica</i> Evans	+	—		+	+	+
<i>Lophocolea bidentata</i> (L.) Dumort.	—		—	+	—	+
“ <i>heterophylla</i> (Schrad.) Dumort.	+	+	+	+	+	+
“ <i>minor</i> Nees		+	+	+	+	+
<i>Lophozia alpestris</i> (Schleich.) Evans	+	+	+			+
“ <i>attenuata</i> (Mart.) Dumort.	+	+	+			+
“ <i>badensis</i> (Gottsche) Schiffn.			+			+
“ <i>barbata</i> (Schmid.) Dumort.	+	+	+	+		+
“ <i>bicrenata</i> (Schmid.) Dumort.	+	+	+	+	+	+
“ <i>confertifolia</i> Schiffn.	+		+			
“ <i>excisa</i> (Dicks.) Dumort.	+	+			+	+
“ <i>Floerkei</i> (Web. f. & Mohr) Schiffn.		+	+			
“ <i>Hatcheri</i> (Evans) Steph.	+					
“ <i>heterocolpa</i> (Thed.) M. A. Howe	+					
“ <i>incisa</i> (Schrad.) Dumort.	+	+	+	+	—	+
“ <i>inflata</i> (Huds.) M. A. Howe	+	+	+			+
“ <i>Kaurini</i> (Limpr.) Steph.			+			
“ <i>Kunzeana</i> (Hüb.) Evans		+				
“ <i>longidens</i> (Lindb.) Macoun	+	+				
“ <i>longiflora</i> (Nees) Schiffn.	+	+				
“ <i>lycopodioides</i> (Wallr.) Cogn.	+	+				
“ <i>marctica</i> (Nees) Steph.	+	+	+			+
“ <i>Mildeana</i> (Gottsche) Schiffn.	+	+	+	+		+
“ <i>obtusata</i> (Lindb.) Evans	+					
“ <i>porphyroleuca</i> (Nees) Schiffn.	+	+	+	+		+

	Me.	N. H.	Vt.	Mass.	R. I.	Conn.
<i>Lophozia quinquedentata</i> (Huds.) Cogn.	+	+	+			+
“ <i>ventricosa</i> (Dicks.) Dumort.	+	+	+	+	—	+
<i>Marsupella aquatica</i> (Lindenb.) Schiffn.	+	+				
“ <i>emarginata</i> (Ehrh.) Dumort.	+	+	+	+		+
“ <i>sparsifolia</i> (Lindb.) Dumort.		+				
“ <i>sphacelata</i> (Gieseke) Dumort.		+	+			
“ <i>Sullivantii</i> (DeNot.) Evans	+	+		+		+
“ <i>ustulata</i> (Hüben.) Spruce	+	+				
<i>Mylia anomala</i> (Hook.) S. F. Gray	+	+	+		—	+
“ <i>Taylori</i> (Hook.) S. F. Gray	+	+	+			
<i>Nardia crenulata</i> (Smith) Lindb.	+	+	+	+	+	+
“ <i>crenuliformis</i> (Aust.) Lindb.						+
“ <i>Geosecyphus</i> (DeNot.) Lindb.		+		+		
“ <i>hyalina</i> (Lyell) Carringt.	+	+	+	+		+
“ <i>obovata</i> (Nees) Carringt.	+	+	+			
“ <i>scalaris</i> (Schrad.) S. F. Gray	+					
<i>Odontoschisma denudatum</i> (Mart.) Dumort.	+	+	+	+	—	+
“ <i>elongatum</i> (Lindb.) Evans	+	+				
“ <i>prostratum</i> (Swartz) Trevis.				+	+	+
<i>Pedinophyllum interruptum</i> (Nees) Schiffn.						+
<i>Plagiochila asplenioides</i> (L.) Dumort.	+	+	+	+	+	+
“ <i>Sullivantii</i> Gottsche		+				+
<i>Porella pinnata</i> L.	+	+	+	+	+	+
“ <i>platyphylla</i> (L.) Lindb.	+	+	+	+	+	+
“ <i>rivularis</i> (Nees) Trevis.			+			+
<i>Ptilidium ciliare</i> (L.) Nees	+	+	+	+	—	+
“ <i>pulcherrimum</i> (Web.) Hampe	+	+	+	+	+	+
<i>Radula complanata</i> (L.) Dumort.	+	+	+	+	+	+
“ <i>obconica</i> Sulliv.			+			+
“ <i>tenax</i> Lindb.	+	+		+	—	+
<i>Scapania apiculata</i> Spruce	+	+				
“ <i>convexula</i> C. Müll.	+					
“ <i>curta</i> (Mart.) Dumort.	+	+	+	+		+
“ <i>dentata</i> Dumort.		+	+			+
“ <i>glaucocephala</i> (Tayl.) Aust.		+				
“ <i>gracilis</i> (Lindb.) Kaalaas	+	+				
“ <i>irrigua</i> (Nees) Dumort.	+	+	+			+
“ <i>nemorosa</i> (L.) Dumort.	+	+	+	+	+	+
“ <i>paludosa</i> C. Müll.		+	+	+		
“ <i>subalpina</i> (Nees) Dumort.	+	+				
“ <i>umbrosa</i> (Schrad.) Dumort.	+	+				
“ <i>undulata</i> (L.) Dumort.	+	+	+	+	+	+
<i>Sphenolobus exsectaeformis</i> (Breidl.) Steph.	+	+	+			
“ <i>exsectus</i> (Schmid.) Steph.	+	+	+	+		+

	Me.	N. H.	Vt.	Mass.	R. I.	Conn.
<i>Sphenolobus Hellerianus</i> (Nees) Steph.	+	+	+		—	+
“ <i>Michauxii</i> (Web. f.) Steph.	+	+	+	+		+
“ <i>minutus</i> (Crantz) Steph.	+	+	+			
<i>Temnoma setiforme</i> (Ehrh.) M. A. Howe	+	+	+			
<i>Trichocolea tomentella</i> (Ehrh.) Dumort.	+	+	+	+	+	+
ANTHOCEROTACEAE.						
<i>Anthoceros carolinianus</i> Michx.						+
“ <i>crispulus</i> (Mont.) Douin						+
“ <i>levis</i> L.	+	+	+	+	+	+
“ <i>Macounii</i> M. A. Howe	+					+
“ <i>punctatus</i> L.	+	+	+	+		+
<i>Notothyas orbicularis</i> (Schwein.) Sulliv.		+	+	+	—	+

NOTES ON THE PRECEDING LIST.

It will be noted that the list just given includes 177 species, a gain of 54, or nearly 44 per cent., over the preliminary list. From Maine 123 species are now listed, a gain of 64 per cent.; from New Hampshire 130 species, a gain of about 60 per cent.; from Vermont 109 species, a gain of about 63 per cent.; from Massachusetts 97 species, a gain of about 29 per cent.; from Rhode Island 77 species, a gain of about 18 per cent.; and from Connecticut 134 species, a gain of about 44 per cent. The number of species now known to be common to all six states is 53, equivalent to a gain of nearly 71 per cent.

If the revised list is compared with the preliminary list a large number of differences will be observed. Most of these are due to the additions; the others indicate reductions to synonymy or other changes in nomenclature of various sorts. For the sake of convenience these are summarized below, references being given to the writer's Notes, where more complete discussions may be found. The Roman numeral in each case refers to the number in the series, the Arabic numeral to the page.

Additions. *Riccia Austini* (IX, 4); *R. dictyospora* (IX, 6); *R. hirta* (IX, 8); *R. Lescuriana* (IX, 10); *R. sorocarpa* (VIII, 193); *Ricciella membranacea* (VIII, 196); *Neesiella pilosa* (X, 210); *Metzgeria crassipilis* (VII, 188); *M. furcata* (VII, 185); *M. pubescens* (VI, 185); *Pallavicinia Flotowiana* (II, 165); *Pellia Fabroniana* (VII, 189); *P. Neesiana* (VII, 190); *Calypogeia Neesiana* (VII, 193);

C. sphagnicola (V, 65); *C. suecica* (V, 66); *C. tenuis* (V, 69, pl. 73, f. 9-14); *Cephaloziella bifida* (X, 220); *C. elachista* (VII, 191); *C. Hampeana* (VII, 192); *C. papillosa* (X, 222); *C. Sullivantii* (VI, 189; also III, 55); *Chiloscyphus fragilis* (X, 217); *Ch. rivularis* (X, 219); *Frullania inflata* (VIII, 201); *F. saxicola* (VIII, 202); *F. Selwyniana* (VI, 191); *Jungermannia cordifolia* (II, 170); *Lepidozia sylvatica* (II, 186, pl. 57); *Lophozia badensis* (VIII, 197; also IV, 35); *L. confertifolia* (V, 59); *L. excisa* (IV, 34); *L. Hatcheri* (X, 210; also VI, 188); *L. heterocolpa* (X, 211); *L. Kaurini* (VIII, 198); *L. Kunzeana* (III, 52); *L. longidens* (V, 59); *L. longiflora* (VI, 189); *L. Mildeana* (VIII, 199); *L. obtusa* (X, 212); *L. porphyroleuca* (IV, 36); *Marsupella aquatica* (II, 167; also VI, 186)¹; *M. sparsifolia* (III, 52); *M. Sullivantii* (V, 57; also II, 167); *Nardia crenuliformis* (VI, 186); *N. scalaris* (IX, 11); *Odontoschisma elongatum* (IX, 13); *Pedino-phyllum interruptum* (VIII, 200); *Ptilidium pulcherrimum* (IV, 42); *Scapania apiculata* (V, 71); *S. dentata* (IV, 41); *S. glaucocephala* (VII, 194); *S. gracilis* (IV, 42); *Sphenolobus Hellerianus* (II, 172); *Anthoceros carolinianus* (X, 223); *A. crispulus* (IX, 16); *A. Macounii* (VI, 191).

Reductions to synonymy and other changes of names. *Riccia crystallina*, *R. fluitans*, and *R. Sullivantii* (of the preliminary list) are now placed in the genus *Ricciella* (V, 56, 57); *Archilejeunea clypeata* and *A. Sellowiana* are now *Leucolejeunea clypeata* and *L. unciloba*, respectively (VI, 190); *Bazzania triangularis* is now *B. tricrenata* (VI, 190); *Cephalozia catenulata* (of list) is now *C. serriflora* (II, 173); *C. divaricata* is now *Cephaloziella byssacea* (X, 221); *C. Jackii* is now *Cephaloziella myriantha* (VI, 190; also III, 55); *C. lunulaefolia* is now *C. media*²; *Chiloscyphus ascendens* is now included under *Ch. pallescens* (III, 53; X, 212); *Frullania virginica* is now included under *F. eboracensis* (IV, 44); *Jubula Hutchinsiae* (of list) is now *J. pennsylvanica* (III, 55); *Kantia Sullivantii* and *K. Trichomanis* are now *Calypogeia Sullivantii* and *C. Trichomanis*, respectively (V, 67, 70); *Lepidozia sphagnicola* is now included under *L. setacea*

¹ In the second place quoted the writer proposed for this species the combination *M. robusta* (DeNot.) Evans, based on *Sarcoscyphus Ehrharti*, var. *robustus* DeNot., raised to specific rank, as *Nardia robusta*, by Trevisan in 1877, and therefore earlier than Schiffner's *M. aquatica* of 1896. Massalongo (Atti Reale Ist. Veneto 69: 146. 1909), however, has since shown that the var. *robustus* DeNot. represents the typical form of *M. emarginata*. It therefore becomes necessary to restore the name *M. aquatica* to the present species.

² The reasons for this change have not yet been discussed in the writer's Notes.

(II, 185); *Lophocolea Austini* is now included under *L. heterophylla* (IV, 37); *Lophozia gracilis* is now *L. attenuata* (VI, 187); *L. Lyoni* is now *L. quinquedentata*¹; *Nardia haematosticta* is now *N. Geoscyphus* (V, 57).

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PHILOLOGICAL ASPECTS OF THE "PLANTS OF WINELAND THE GOOD."

A. LEROY ANDREWS.

A CONSIDERABLE time has elapsed since the appearance of Professor Fernald's preliminary study upon the Norse discovery of America,² but as the author's promised greater work upon the subject is not yet forthcoming the publication of the following considerations may not be without interest to those who have read his article.

It may be said at the outset that all attempts to find the Vinland of the Norsemen in New England have been unsuccessful. The evidence for Nova Scotia seemed relatively stronger, nor would the conclusions of Fernald's preliminary study, even if accepted in all their details, preclude the possibility of the Norsemen having come as far south as Nova Scotia, though the author seems unwilling to believe that they did.

Of the many works devoted in whole or in part to the Norse discovery of our continent the one possessing value beyond all others is that of the Norwegian historian, Gustav Storm, published in 1887,³ who after a critical survey of all available material concluded that the Norsemen came as far south in America as Nova Scotia, but hardly further. Reeves, whose book⁴ forms the basis of Fernald's study, was a young American scholar of promise who met with an untimely

¹ The reasons for this change have not yet been discussed in the writer's Notes.

² RHODORA, xii, 17ff. 1910.

³ Aarbøgger for nordisk Oldkyndighed og Historie, 2 Række, ii, 293ff.; the paper is also accessible in English in Mémoires de la Société Royale des Antiquaires du Nord viii, 307ff. 1888. For the bibliography of the Norse discovery of America see H. Hermannsson, Islandica, ii (Ithaca, N. Y.). 1909.

⁴ The Finding of Wineland the Good. London. 1890.

death not long after the publication of his book. The book is of value as furnishing a phototypic reproduction of the saga-texts forming the most extensive sources of information as to the Norse voyages to America, enabling one then to form an independent judgment in critical questions of textual reading without a special trip to Copenhagen. Further than this very considerable service it represents no noteworthy contribution to the problem, though including many of Storm's results and offering generally a good means of orientation.¹

The first serious assault upon Storm's results is that of Fernald, who confines himself for the present to the botanical field where his success may well lead one to suspect that Storm's position is less impregnable than had been supposed. Storm's botanical conclusions were that the wild grape may have been found by the Norsemen as far north as Nova Scotia, while he accepted Schübeler's hypothesis² that the "self-sown wheat" of the Norsemen was the wild rice (*Zizania*) of eastern America. Fernald after reviewing the facts, present and historical, about the northeastern distribution of the American species of wild grapes doubts that the Norsemen could have found them in Nova Scotia, and certainly no one familiar with Fernald's knowledge of the distribution of our northeastern plants and his familiarity with their literature would question the weight of his contentions. From the lack of similarity either in appearance or habitat he doubts that the Norsemen could have called our wild rice wheat, a doubt one cannot but subscribe to, and he notes further that wild rice does not occur in Nova Scotia anyhow. From this last fact there seems no escape. In so far Fernald has certainly made a real contribution. But he does not stop with this; much of positive conclusion he offers as a substitute for what he has demolished. The Norse *rínber* did not mean grapes at all, but only wild currants (*Ribes* spp.), or perhaps mountain-cranberries (*Vaccinium Vitis-Idaea*), their "self-sown wheat" was a species of grass (*Elymus arenarius*) more closely resembling wheat, while a wood referred to by the Norsemen as *mqsur* was the white birch. These conclusions called by the author "reasonably certain" are by no means invulnerable to criticism. Fernald's reference to the unquestionable Swedish *vinbär* = currant and to a similar terminology elsewhere among the northern European peoples as well

¹ Cf. the review of Gering, *Zeitschrift für deutsche Philologie*, xxiv, 84ff. 1892.

² Schübeler was not the first to whom this idea had suggested itself, as will be noted further on.

as to the wide-spread practice of preparing a beverage from the fruit of this plant is not without interest, but neither the name nor the practice, for either of which Fernald's earliest literary testimony is from the close of the 16th century, has any necessary application to the time or place of the literary monuments commemorating the Norse discovery of America. Fernald reasons as a botanist: if the most learned botanists of the end of the 16th and beginning of the 17th centuries confused the currant or the mountain-cranberry with the southern European grape, one could not expect that they were distinguished by anyone in northern Europe at an earlier period. That linguistic usage bears abundant testimony to the association (if not confusion) of the 3 kinds of plants with one another is an indubitable fact. But Fernald's attitude towards the facts of linguistic history seems unconsciously to coincide with that of a bygone school of philologists who regarded languages as undergoing a constant process of deterioration: i. e., he looks upon everything found in a relatively modern period as a survival from a more general condition of things in a linguistically richer past. As a matter of fact the development is more complex and the beginning must be considered as well as the end. The word *wine* and all its northern European kin are loan-words directly or indirectly from the Latin *vinum* (Vulgar Latin also *vinus*), the word with the things for which it stands becoming known to the Germanic peoples from about the beginning of the Christian era, to the most northerly ones of course relatively later.¹ That as a loan-word it first applied to the foreign grape and its products is incontestable. The earliest record we have of the combination wine-berry is in the Gothic of the Bible-translation accredited to Bishop Ulfilas (Wulfila) of the 4th century, the oldest manuscripts of which date from the 5th and 6th centuries. It occurs here as *weinabasi* (Mat. vii, 16; Lu. vi, 44) translating the Greek *σταφυλή*. In the related Old Germanic languages it was also found: in Old Saxon and Old High German *wīnberi*, Old English *wīnberie* (*berige*), Old Norse *vīnber*, everywhere with the meaning grape, a meaning preserved in present German *Weinbeere* and generally in the Scandinavian languages. The transfer of the word to currant has become thoroughly established only in modern Swedish,

¹ Cf. Walde, *Lateinisches etymologisches Wörterbuch*, 2nd ed., 839. 1910; Falk & Torp, *Norwegisch-dänisches etymologisches Wörterbuch*, 1381. 1911; Kluge, *Etymologisches Wörterbuch der deutschen Sprache*, 7th ed., 487. 1910; Hoops, *Waldbäume und Kulturpflanzen im germanischen Altertum*, 558ff. 1905; with the literature there cited.

in that such use of it in Norwegian or English is more or less local, *vinbær* in Danish-Norwegian still meaning regularly grape. In modern Icelandic *vínber* means grape, as it did also in Old Icelandic in all cases of its use preserved to us. In view of these facts the use of the fermented juice of the currant in lieu of wine should not constitute an argument of great weight, but it may be said that we are tolerably well informed as to the details of life in Iceland in the saga-period (as we are for that matter of the Icelandic vocabulary) and that the fermented drinks of those troublous times were of an entirely different nature.¹ Wine was of course known, but is usually spoken of as an expensive article of import, a luxury of gods, kings and the very wealthy. For the substitute use of the fermented juices of native berries there is not much evidence, nor would one be inclined to suppose that such a beverage, if actually made, would have been dignified with the name of *vín*. Still it may be of passing interest to note that the saga of Bishop Páll² does speak of such wine made of crow-berries (*Empetrum nigrum*) but the making of it came as a new suggestion brought by Bishop Jón who had just arrived from Greenland, the latter having received the suggestion from the Norwegian king Sverrir. There is a corresponding entry in the Icelandic annals under date of 1203³ that berry-wine was made that year for the first time in Iceland. The fact is also referred to in Finnur Jónsson's Ecclesiastical History of Iceland,⁴ the author being disinclined to believe that such wine was used for communion purposes (the circumstances connected with the report might well suggest that it was hit upon as a means of providing a substitute for communion-wine, which must have been expensive or often difficult to get at all in Iceland and even more so in Greenland) and stating that he knew a man of his own time who had made the same experiment with a degree of success, though the product was not of remarkable quality. The earliest reference to the vines from which *Vínland* took its name is of course Adam of Bremen's Latin *vitis*. If Fernald had simply argued that the Norsemen were not competent to know exactly what a grape was and might conceivably have taken something else for it,

¹ Cf. Weinhold, *Altnordisches Leben*, 151ff. 1856; Kålund in Paul, *Grundriss der germanischen Philologie*, iii², 448.

² *Biskupa sögur*, i, 135.

³ *Islenzkir Annálar*, 84.

⁴ *Finni Johannaei Historia ecclesiastica Islandiae*. Tom. i, 305, note b. Havniae, 1772. Cf. Olafsen & Povelsen, *Reise igiennem Island*, i, 171 f. 1772 (*Reise durch Island*, i, 92. 1774).

it could readily be granted. What the sagas say of the Vínland grapes leaves no doubt upon this point, in fact the relatively less credible one has felt obliged to introduce a southern European with the suggestive name of Tyrkir as a person competent to identify grapes. One might for example conceive of them as finding a wild plum or cherry (*Prunus* sp.) which would at least account for their loading up their boats with the wood of the grape. There is, so far as I can see, absolutely nothing gained by Fernald's attempt to find a new interpretation for the plant giving its name to the country. Such arguments as that a Scandinavian *vindrufra* (= grape) render it unlikely that the Norsemen would have called grapes *vinber* merely show upon what unfamiliar ground Professor Fernald is treading, as, if one choose to neglect the occurrence side by side of the corresponding *Weinbeere* and *Weintraube* in modern German, *vindrufra* is only a late Swedish word (it occurs also in Danish as *vindrue* = grape), the latter part of which (or for that matter the whole combination) is borrowed from the Low German, as the form of the word sufficiently shows.¹ One of Fernald's numerous footnotes (6 on page 21) leaves one similarly puzzled both as to meaning and application until one consults the reference to DeCandolle and finds it taken over intact, apparently without an exact understanding of its content. *Ribs* and *resp* are simply two of the distortions of the mediaeval Latin *ribes* found in recent Scandinavian (perhaps brought in with a cultivated strain of the plants) and not at all old Scandinavian words.² It is peculiar that the wild currants of northern Europe seem to have had no common Old Germanic or even common Scandinavian name.³ For the interesting facts about the bringing of the plant-name *ribes* to Europe by the Arabs see Fischer-Benzon, *Botanisches Centralblatt*, lxiv, 371ff., 401ff. 1895. Fernald has himself been unable to find any evidence that the mountain-cranberry has ever been called *vinber* in any part of Scandinavia.

The conclusion that the "self-sown wheat" found was the Lyme-grass (*Elymus arenarius*) may readily seem more plausible than that it was the wild rice, but even then it is difficult to see why the Norsemen should have noted as remarkable the occurrence of a plant with which they were entirely familiar at home and why they should

¹ Cf. for example Falk & Torp, loc. cit., 158.

² Cf. Falk & Torp, loc. cit., 896.

³ Cf. Hoops, *Reallexikon der germanischen Altertumskunde*, i, 204. 1912.

characterize it as self-sown (which surely implies a contrast with the sown wheat), if it was a plant they knew solely in the wild state. Nor has Fernald shown that the plant in question has ever been called *hveiti*: the terms "wild wheat," "wheat-grass," and "strand-wheat" which he brings as argument involve a comparison with wheat, not an identification with it, and none of them are Icelandic, the plant being known in Iceland as *melr* as Fernald notes. *Hveiti* meant in Old as it does in Modern Icelandic wheat. Fernald's note that this identification of the "self-sown wheat" with *Elymus arenarius* had already been published by Peter (Pehr) Kalm in 1764 is of decided interest, but does not prove its correctness. It may be of interest to note a prior publication of the same identification, viz. in a dissertation of G. A. Westman defended by its author in Åbo in 1757, during the rectorship of Kalm himself the dissertation being evidently largely inspired by the latter's American trip.¹ The author's refutation of the idea that the wheat of the Norsemen was *Zizania* is not dissimilar to Fernald's, Westman maintaining that this last plant resembled oats more than it did wheat and that it did not grow in fields, but actually in the water (pp. 16ff.). Kalm's idea also found expression in the article of Wormskiöld to be referred to later.

As to the wood called *mqsurr* Fernald may be entirely right in thinking it to be birch, or for that matter the white birch. The idea that it was maple, which Fernald combats, is however not one that has been generally held, but was evidently found in Reeves' book (Reeves, p. 170, does not commit himself however and states himself that the word had already been connected with Swedish masbjörk, etc), whence it may be followed back to Rafn² and is by him accredited to Wormskiöld.³ This identification also goes back ultimately to Kalm's American trip, the wood being discussed very sensibly by Westman in the dissertation just referred to (pp. 12ff.), who suggested that it might be the form of *Acer rubrum* seen by Kalm in Canada. If Fernald had based his researches upon Storm's work, he would have noted that the latter made no attempt to identify the tree, doubtless because he understood the word. The present Swedish *masur* and German *Maser* leave no doubt as to the meaning of the identical Old Norse word *mqsurr*. It means everywhere wood with a spotted or

¹ Westman, *Itinera priscorum Scandianorum in Americam*. Aboae. 1757.

² *Antiquitates americanae*, 441f. 1837.

³ *Det skandinaviske Litteraturselskabs Skrifter*, xiii, 400ff, 1814.

mottled grain, the word being closely related to the German *Masern* (= measles) and the English *measles*."¹ It does not refer to any definite species or genus of trees. The "bird's eye maple" furnished the ground for the hypothesis that it was a species of maple the Norsemen referred to and credit is due Fernald for emphasizing a more probable identity with the white birch, but the fact must be borne in mind that the word permits no such certain identification as to contribute in any way to the determination of the point on the American coast reached by the Norsemen, but on the contrary the identity of the tree furnishing the *mapar* might depend upon the latitude in which it was found.

The fundamental problem, that of the value of the sources, Professor Fernald has naturally left untouched. The Old Icelandic sagas exist in all degrees of historical trustworthiness from that of very reliable contemporary or slightly later biography or history to the wildest fiction. In point of subject-matter, style and historical reliability they admit of classification into a number of groups. Most reliable generally are the *Konungu sagnar* or sagas of the mostly Norwegian kings, with which a few other historical works dealing with Iceland, etc. may be included. The authors of these are in many cases known. The *Islandian sagnar*, to which the most considerable sources for the Norse discovery of America belong, differ among other things in being all of unknown authorship. They were written mostly in the 13th century and show stylistically the characteristics of literary rather than primarily historical work.² They deal for the most part with Icelandic (in our case Greenlandic) personages of the 9th and 10th centuries: i. e. two to three centuries intervene between the events and the written record, or rather elaboration of them. The materials that the authors had to use were mostly oral traditions two or three hundred years old. That these literarily remarkable productions are not of the nature of historical documents must be clear enough from the nature of the case. In this particular instance a check upon their reliability is offered in the fact that two such records of the oral tradition of the Norse discovery of America are preserved: the so-called *Einir's saga randa* and the *Grœnlendinga Pattr*. Under the circumstances only the features in which both agree could be

¹ The word is entirely correctly explained by Westman. Cf. also Grœnlands historiske Mindesmærker, i. 279 f. 1838.

² Cf. e. g. Neckel in Mitteilungen der schottischen Gesellschaft für Volkskunde, xi. 38ff. 1909.

reasonably trustworthy, but such features are surprisingly few, in that the two sources show the widest discrepancy. Storm's method in predicating a considerable degree of historical reliability for the *Eiríks saga rauða* at the expense of the other is hardly to be justified. That this saga may be relatively better is not tantamount to its being reliable and the other worthless. Reeves' book represents essentially Storm's point of view on this matter, as it has generally been adopted by subsequent authors.

Since the publication of Fernald's paper a real contribution to the problem of the value of the sources has appeared in Nansen's book.¹ Nansen with the able assistance of his colleagues, Torp, Moe and others finds that the grapes and the self-sown wheat associated with Scandinavian records of the Norse discovery of America are an offshoot of common mediaeval legends of the "Islands of the Blest," which quite regularly, e. g. in Isidor, etc., were characterized by just these features.²

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¹ Nord i Tåkeheimen. Kristiania. 1911. The book has been accessible to me only in the English translation: In Northern Mists. New York. 1911. The essential points with reference to the Norse discovery of America may also be found in the *Geographical Journal*, xxxviii, 557 ff. 1911, being a lecture delivered by Nansen before the Royal Geographical Society, Nov. 6, 1911.

² Of interest is also the discovery brought out by the first partial publication of Nansen's results that similar results had been attained independently and earlier by a Swedish scholar, Söderberg. (Cf. In Northern Mists, ii, 62ff.). Nansen's brief estimate of Fernald's publication (ii, 5f.) is in entire accord with the considerations I have given expression to above.

FURTHER NOTES ON THE PANICUMS OF ESSEX COUNTY,
MASSACHUSETTS.

F. TRACY HUBBARD.

SPECIES NEWLY NOTED FROM THE COUNTY.

DURING about a week's collecting around Manchester this fall I discovered several species of *Panicum* not in my former list. [RHODORA 14:36 (1912)]. At least three of these seem to be unreported from Essex County. Additional collections were made of certain of the species mentioned in the former list and one species there noted must be excluded as further collections of similar material have led to a reversal of opinion.

PANICUM LINDHEIMERI Nash. Hitchcock & Chase, Contr. Nat. Herb. 15:203 cite this species from Maine; New Hampshire; Vermont; Massachusetts, Framingham, *Smith* no. 734; and Connecticut. There is no specimen of this species from Massachusetts in either the Gray Herbarium or the Herbarium of the New England Botanical Club, but in the latter is a specimen from Rhode Island, Warwick *M. L. Fernald*, June 25, 1910, so that the species has been sparingly found in all the New England states, most commonly in Maine. In the locality where I collected it, it was fairly abundant. My specimen is No. 482, sandy hillside, among rocks, back of Dana's Beach, Manchester, Oct. 1, 1912. This number was sent to Mrs. Chase of the Bureau of Plant Industry and was determined by her. The material is more pubescent than *P. Lindheimeri* ordinarily is and Mrs. Chase states that it is the form which was named *P. Funstoni* by Scribner and Merrill.

PANICUM MERIDIONALE Ashe. Hitchcock & Chase, l. c. 210 do not cite this species from Massachusetts, but in the Herbarium of the New England Botanical Club there are specimens from Sandwich, *F. S. Collins*, No. 1153; Brewster, *F. S. Collins*, Nos. 1288, 1205; Wellfleet, *F. S. Collins*, No. 1238. I have also seen specimens from Wellesley (Herb. Wellesley College); Dedham, Purgatory Swamp, *F. F. Forbes*, June 27, 1903 (Herb. Forbes) and Wilmington, *G. G. Kennedy* (Herb. Kennedy). My specimen is No. 475a, rich open woods, Beverly Farms, Sept. 29, 1912. This material was a single

plant collected with No. 475 and sent to Mrs. Chase for determination. No. 475 is *P. huachucae* Ashe var. *fasciculatum* (Torr.) Hubbard (Var. *stylivola* Hitchc. & Chase).

PANICUM HETEROPHYLLUM Bosc var. *THINIUM* (Hitchc. & Chase) Hubbard (*P. columbianum* Scribn. var. *thinium* Hitchc. & Chase). Hitchcock and Chase, l. c. : 248 cite this species from Massachusetts, Nantucket, *Bicknell*, in 1889 and 1904. There is no specimen of this species in the Gray Herbarium, but in the Herbarium of the New England Botanical Club is a specimen from Winchester, *C. E. Perkins*, Sept. 1, 1882. My specimen is No. 483, sandy hillside back of Dana's Beach, Manchester, Oct. 1, 1912. This number was verified by Mrs. Chase.

While this variety has not been reported from Essex County I know that it has been previously collected from the same locality as my No. 483 by Miss Cora H. Clarke as I have seen specimens sent by her to Mrs. Chase. The variety seems to be rare and only sparingly collected from Massachusetts to Virginia always on or near the coast. At Dana's Beach it seemed to be fairly abundant.

ADDITIONAL NOTES ON PREVIOUSLY REPORTED SPECIES.

PANICUM TENNESSEENSE Ashe. This very variable species seems to be common in Essex County and several additional collections of it were made.

PANICUM LANGUIDUM Hitchc. & Chase. This fall I revisited the locality where I collected my No. 205 in 1911 and collected other material similar to it and also made several collections in Manchester which seemed to be the same species. These were sent to Mrs. Chase and after a careful study of them she decided that they were a form of *P. tennesseense* Ashe and redetermined No. 205 as the same, so that *P. languidum* must be removed from the list of Essex County Panicums.

Mrs. Chase writes me, in part, under the date of November 11, 1912, "I think it [No. 205] is an unusual specimen of *P. tennesseense*. The panicle of 205 is much longer than characteristic for *P. tennesseense*, and the blades less firm. These fall "vernal" culms are very deceiving but going over the whole group again, I should call this *P. tennesseense*."

PANICUM TSUGETORUM Nash. This species is abundant in Essex

County and numerous forms of it were collected from typical material to one collection which very closely approached *P. heterophyllum* Bosc (*P. columbianum* Scribn.).

PANICUM UMBROSUM Le Conte (*P. Ashei* Pearson). This species was collected once more and was fairly plentiful in the locality. No. 480, among boulders back of rocky coast, near Dana's Beach, Manchester, Oct. 1, 1912.

Additions to previous list of species collected in Essex County; noting specimens in the Gray Herbarium or the Herbarium of the New England Botanical Club or where there are published records of the species from Essex County.

P. Lindheimeri Nash.

P. meridionale Ashe.

P. heterophyllum Bosc var. *thinium* (Hitchc. & Chase) Hubbard.

P. latifolium L. N. E. Bot. Club; Robinson, Fl. Essex Co. 130 (1880)

CAMBRIDGE, MASSACHUSETTS.

THE VARIATIONS OF *LUZULA CAMPESTRIS* IN NORTH AMERICA.

M. L. FERNALD and K. M. WIEGAND.

THE cosmopolitan species, *Luzula campestris* (L.) DC., has been treated by Buchenau¹ as consisting of twenty geographical varieties and by him has been kept apart specifically from the American *L. comosa* Meyer. In the study of certain collections from northeastern America, however, the writers, who have found it necessary to organize the material of these two species in the Gray Herbarium and during the prosecution of this study have been kindly loaned the local collection of the Academy of Natural Sciences of Philadelphia, have found it impossible to maintain any real specific lines between these two plants. In this failure to find specific lines between *L. campestris* and *L. comosa* they have arrived at the conclusion which has already been reached by several other students, for example Otto Kuntze²

¹ Buchenau in Engler, Pflanzenf. iv. Fam. 36, 83-95 (1906).

² Kuntze, Revis. Gen. Pl. ii. 724 (1891).

and C. V. Piper.¹ The characters used by Buchenau and others to separate *L. comosa* from *L. campestris* are the elongate spikes, frondose bracts, more ciliate bractlets and prophylla, and larger and more denticulate perianth segments. But in many specimens from the Northwest which are otherwise good *L. comosa* the spikes are subglobose; and more or less cylindrical spikes are frequently seen in *L. campestris*, var. *multiflora*, while they are made the basis of *L. campestris*, var. *calabra* (Ten.) Buch. In many plants otherwise *L. comosa* the bracts are short and slender while in *L. campestris*, var. *frigida*, as described by Buchenau, we find "inflorescentia composita, saepe a bracteis 1 vel 2 frondosis rigidis superata"; and similar frondose bracts occur occasionally in *L. campestris*, vars. *alpina* and *multiflora*. The ciliation of the bractlets and prophylla proves to be highly variable in both *L. comosa* and *L. campestris* without any clear line of demarcation between. Extreme specimens of *L. comosa* do indeed have large flowers, but the examination of a large suite of specimens shows that in the two so-called species the measurements overlap so frequently that no real line can be drawn between them. Extreme *L. comosa* would seem to be simply a stage larger in size of flower just as *L. campestris*, var. *multiflora* is a stage larger than *L. campestris*, var. *pallesceus*.

Although the color of the perianth or capsule has frequently been considered of taxonomic importance, it is highly variable and often seems to be directly modified by the intensity of the light, being brownish in the more exposed situations and extremely pale in the woods. In the more boreal and alpine habitats, however, the color is, as would be expected, very intense, usually dark-chestnut to blackish, and this tendency, accompanied by a shortening or suppression of the rays, distinguishes such plants as *L. campestris*, vars. *alpina* (*sudetica*), *frigida* and *congesta* which, having fairly well marked geographical ranges, are maintained as varieties.

The size of the seed and the length of the caruncle have sometimes been used in separating plants of the *campestris* series, but after an examination of the seeds of the plants said to have pronounced differences in these characters it has seemed to the writers that the differences are slight and apparently not constant. The varieties with the smallest flowers, *L. campestris*, var. *pallesceus* for instance, naturally have their seeds smaller than do the large-flowered plants, but the

¹ Piper, Contrib. U. S. Nat. Herb. xi. 186 (1906).

differences are so slight as to be difficult to use except in actual comparison of large series of specimens.

In organizing the North American material the writers have found the following key to the varieties of *L. campestris*, based largely on Buchenau's treatment, of service. The measurements of the length of the perianth, which form the primary basis of division, have been made by the writers from the specimens they have examined, and, although the sizes of the flowers overlap, as would be expected in such a polymorphous species, the varieties recognized all seem to be definite geographic trends of the species.

- A. Plant stoloniferous: inflorescence loose: flowers of medium size (3 mm. long): Eurasian.....1. *L. campestris* (typical).
- A. Plants caespitose. B.
 - B. Perianth large (5-6.5 mm. long): heads globose to cylindric, 1-2 cm. long: inflorescence loose.....2. var. *macrantha*.
 - B. Perianth of medium size (2.5-4.5 mm. long). C.
 - C. Perianth 3-4.5 mm. long, equaling or exceeding the capsule: heads cylindrical, rarely globose, the longer 10-30 mm. long: inflorescence loose or somewhat congested.....3. var. *comosa*.
 - C. Perianth 3.5-4 mm. long, usually much exceeding the capsule; inflorescence with no obvious rays.....4. var. *congesta*.
 - C. Perianth (2.8-)3-4 mm. long, usually exceeding the capsule: heads hemispherical to short-cylindrical, 3-9 mm. long, mostly on unequal rays; some short rays strongly divergent.....5. var. *echinata*.
 - C. Perianth 2.4-3.3 mm. long, slightly or not at all exceeding the capsule: heads globose or short-cylindrical, 4-11 mm. long, on mostly ascending rays. D.
 - D. Perianth and capsule pale, ferruginous or moderately castaneous: inflorescence lax or rarely congested.
 - Base of plant rarely producing bulblets: perianth 2.5-3.3 mm. long.....6. var. *multiflora*
 - Base of plant commonly producing bulblets: perianth 2-2.5(-3) mm. long.....8. var. *bulbosa*.
 - D. Perianth and capsule intensely castaneous or almost black: inflorescence usually congested.....7. var. *frigida*.
- B. Perianth small (1.8-2.3 mm. long).
 - Inflorescence lax to somewhat dense: perianth and capsule pale to moderately castaneous.
 - Base of plant copiously bulblet-bearing: perianth 2-2.3(-3) mm. long.....8. var. *bulbosa*.
 - Base of plant not bulblet-bearing: perianth 1.8-2.3 mm. long.
 - 9. var. *pallescens*.
 - Inflorescence dense: perianth and capsule intensely castaneous or almost black.....10. var. *alpina*.

1. *L. CAMPESTRIS* (L.) DC. Fl. Franc. iii. 161 (1805). *Juncus campestris* L. Sp. Pl. 329, in part (1753). *L. campestris*, var. *vulgaris* Gaudin, Fl. Helv. ii. 572 (1828); Buchenau in Engler, Pflanzenr. iv. Fam. 36, 86 (1906), which see for fuller synonymy. *Juncodes campestre* O. Ktze. Revis. Gen. Pl. ii. 724 (1891). *Juncoides campestre* Coville, Contrib. U. S. Nat. Herb. iv. 208 (1902).—Eurasia. Said by Buchenau to occur in northwestern America.

2. Var. **macrantha** (Watson), n. comb. *L. comosa*, var. *macrantha* Watson, Bot. Cal. ii. 203 (1880). *Juncoides comosum*, var. *macrantherum* Parish, Erythea, iii. 59 (1895). *Juncoides comosum*, var. *macranthum* Howell, Fl. N. W. Am. i. 681 (1903).—CALIFORNIA: the specimens originally labelled *L. comosa*, var. *macrantha* by Watson were from Plumas County, May, 1877, Mrs. R. M. Austin; dry hills southeast of Mt. Diablo, May 23, 1860–62, Brewer, no. 1148; Big Trees, May, 1860–62, Brewer, no. 2335. A plant with extremely large flowers (6.5 mm. long) and a well-developed bulb borne on a short stolon comes from Placer County (Mrs. M. E. P. Ames). Parish reports the plant southward to San Bernardino County.

3. Var. **comosa** (Meyer) n. comb. *L. comosa* Meyer, Synop. Luz. 21 (1823); Watson, Bot. Cal. ii. 202 (1880); Buchenau in Engler, Pflanzenr., iv. Fam. 36, 83 (1906). *Juncodes campestre*, var. *comosum* O. Ktze. Revis. Gen. Pl. ii. 724 (1891). *Juncodes comosum* Sheldon, Minn. Bot. Stud. i. 64 (1894). *Juncoides comosum* Parish, Erythea, iii. 59 (1895). *Juncoides campestre*, in part, of Piper, Cont. U. S. Nat. Herb. xi. 186 (1906). *L. comosa*, var. *subsessilis* Watson, Bot. Cal. ii. 203 (1880). *Juncodes comosum*, var. *subsessilis* [e] Sheldon, Minn. Bot. Stud. i. 64 (1894). *Juncoides comosum*, var. *subsessile* Howell, Fl. N. W. Am. i. 681 (1903). *L. subsessilis* Buchenau, Öster bot. Zeitschr. xlviii. 290 (1898) and in Engler, l. c. 68 (1906). *L. comosa*, var. *laxa* Buchenau in Engler, l. c. 83 (1906).—Northeastern Asia (COPPER ISLAND) and ALASKA to southern CALIFORNIA. Also Newfoundland and eastern Quebec. NEWFOUNDLAND: Baccalieu Island, Notre Dame Bay, July 2, 1902, Sornborger; open river-flat, Glenwood, July 12 & 13, 1911, Fernald and Wiegand, no. 5163; sandy and gravelly banks, Whitbourne, August 8, 1911, Fernald and Wiegand, no. 5168. QUEBEC: sterile meadow, Douglstown, Gaspé Co., August 21 & 22, 1904, Collins, Fernald & Pease.—Without extended field knowledge of the variations here included it seems very unwise to separate from var. *comosa* vars. *subsessilis* and *laxa*, which, judging from the abundant transitional material in the herbarium seem to be mere states of one plant. The varietal name *comosa* is here retained in its aggregate sense.

4. Var. **CONGESTA** (Thuill.) Meyer. Synop. Luz. 18 (1823); Duby in DC. Bot. Gal. ed. 2, i. 479 (1828); Buchenau, Mon. Junc. 162 (1890) and in Engler, l. c. 91 (1906), which see for detailed synonymy. *Juncus campestris* f. *L. Sp. Pl. 330* (1753). *Juncus congestus* Thuill. Fl. Par. ed. 2, 179 (1799). *L. comosa*, var. *congesta* Watson, Bot. Cal.

ii. 203 (1880). *Juncodes comosum*, var. *congestum* Sheldon, Minn. Bot. Stud. i. 64 (1894). *Juncoides comosum*, var. *congestum* Howell, Fl. N. W. Am. 681 (1903).—Europe and Eastern Asia. In North America from VANCOUVER ISLAND to CALIFORNIA.

5. Var. *echinata* (Small), n. comb. *Juncoides echinatum* Small, Torrey, i. 74 (1901). *Luzula campestris*, var. *bulbosa* Robinson & Fernald in Gray Man. ed. 7, 279 (1908) in part, not Wood.—NEW JERSEY and PENNSYLVANIA to GEORGIA and TEXAS.

6. Var. *MULTIFLORA* (Ehrh.) Čelak. Prodr. Fl. Böhem. 85 (1869); Buchenau in Engler, l. c. 94 (1906) which see for detailed synonymy; Robinson & Fernald in Gray Man. ed. 7, 279 (1908). *Juncus campestris* γ, L. Sp. Pl. 329 (1753). *Juncus multiflorus* Ehrh. Calam. Gram. et Tripet. exsicc. (about 1791); Retz. Fl. Scand. Prodr. ed. 2, 82 (1795). *Cyprella campestris*, var. *multiflora* MacMillan, Met. Minn. Val. 142 (1892). *Juncodes campestre*, var. *multiflorum* Sheldon, Minn. Bot. Stud. i. 65 (1894).—Eurasia and North America. In North America the most widely distributed plant, occurring from NEWFOUNDLAND to ALASKA, south to NEW JERSEY, PENNSYLVANIA, ILLINOIS, UTAH and CALIFORNIA; abundant northeastward, rare westward.

7. Var. *FRIGIDA* Buchenau, Öster. bot. Zeitschr. xlviii. 284 (1898), and in Engler, l. c. 93, fig. 55 (1906); Robinson & Fernald in Gray Man. ed. 7, 279 (1908).—Boreal, arctic and alpine Eurasia. In North America from GREENLAND and LABRADOR to NEWFOUNDLAND, southern NEW BRUNSWICK and eastern MAINE; islands of BERING SEA.

8. Var. *BULBOSA* Wood, Class Book (1861) 723; Robinson & Fernald in Gray Man. ed. 7, 279 (1908) in part. *Juncoides bulbosum* Small, Torrey, i. 75 (1901).—Dry open sandy woods and thickets or serpentine barrens, NEW JERSEY and southeastern PENNSYLVANIA to GEORGIA (Small), west KANSAS and TEXAS.—The production of bulblets, though more general in this variety than in the others, is by no means confined to it. They occur occasionally in vars. *macrantha*, *comosa*, *congesta*, and *multiflora* in America and in some of the European and Australian varieties as well as in various species of *Juncus* which ordinarily lack bulblets (see Buchenau, Flora, lxxiv. 77 (1891)). In its inflorescence var. *bulbosa* strongly simulates var. *pallescens* which, however, tends to have somewhat smaller flowers; but in the specimens which are transitional in the size of flowers the presence or absence of bulblets alone seems to distinguish the plants.

9. Var. *PALLESCENS* Wahlenb. Fl. Suec. i. 218 (1824); Buchenau in Engler, l. c. 88 (1906) which see for fuller synonymy. *Juncus campestris* β. L. Sp. Pl. 329 (1753). *Juncus pallescens* Wahlenb. Fl. Lapp. 87 (1812). *L. pallescens* Besser, Enum. Pl. Volh. Pod. 15 (1822).—Eurasia. In North America known only from NEWFOUNDLAND and the Gaspé Peninsula of QUEBEC, but, since it occurs on islands on the Asiatic side of Bering Sea, to be expected from the Alaskan islands. NEWFOUNDLAND: open fields near the Gander River, Glenwood, July 12 & 13, 1911, Fernald & Wiegand, nos. 5160, 5161. QUEBEC: sterile

meadow, New Richmond, July 28–August 1, 1904, *Collins, Fernald & Pease*, July 16 and 17, 1905, *Williams, Collins, & Fernald*; steep slide on the East Branch of Little Cascapedia River, July 29 and 30, 1904, *Collins, Fernald & Pease*; sterile meadow near Giroux Station, Maria, July 11, 1905, *Collins & Fernald*, no. 54.—Hooker (Fl. Bor.-Am. ii. 188) cites var. *pallescent* from “Lake Winnipeg, to the Saskatchewan, and prairies and Lake of the Woods, Rocky Mountains. *Drummond*,” but his description does not indicate whether he had the small-flowered plant or merely var. *multiflora*.

Var. *ALPINA* Gaud. Agrostol. Helv. ii. 247 (1811). *Juncus campestris* η. L. Sp. Pl. 330 (1753). *Juncus sudeticus* Willd. Sp. Pl. ii. 221 (1799). *Luzula sudetica* DC. Fl. Fr. vi. 306 (1815). *Luzula campestris*, var. *sudetica* Čelak, Prod. Fl. Böhm. 749 (1881); Buchenau in Engler, l. c. 89 (1906), which see for fuller synonymy. *Juncoides campestre sudeticum* Coville, Contrib. U. S. Nat. Herb. iv. 208 (1893).—Alpine and subarctic regions of Eurasia. Little known in North America: the only material seen by us comes from Fullerton, lat. 63°, 57', northwest coast of HUDSON BAY, *J. M. Macoun*, no. 79,215. Coville and Funston's no. 1553 from near Mineral King, California, has been referred here, but the material in the Gray Herbarium, though too young for definite determination, has, even in its immature state, perianths longer than in var. *alpina* and the plant may be an extremely dwarfed state of var. *congesta*.

NOTES ON EUPHORBIA CYPARISSIAS L.—While returning after a day spent collecting in and about West Haven, Connecticut, June 23, 1912, in company with Mr. C. H. Bissell and Mr. R. W. Woodward, we crossed an open corner lot by a path used as a short cut to a near-by trolley line. This lot was quite thickly covered with *Euphorbia Cyparissias* L. Remarking that it looked strange I picked several plants and found they were heavily fruited and on further inspection the whole lot was found to be in full fruit. The reason of the peculiar appearance was the bright reddish color of the bracts which was characteristic of the plants all over the lot. A specimen in fruit in the herbarium of Dr. E. H. Eames of Bridgeport, Connecticut, from the well known station of Mr. Walter Deane's at Shelburne, New Hampshire, has been seen by the writer and has this same striking characteristic. In Mr. Deane's interesting articles in RHODORA no mention was made of the color of the bracts. Is this a distinctive trait of all fruiting plants of this species? The soil at the station was sandy and sterile. Owing to lack of time the station was not carefully looked over. The writer is looking forward to a visit to this place at an earlier date during the coming season.—ARTHUR E. BLEWITT, Waterbury, Connecticut.

2/ SOME EXTENSIONS OF LOCAL RANGES. — The Report on the Flora of the Boston District, RHODORA ix. 85, May (1907), makes no mention of the occurrence in this section of *Dicksonia punctilobula* (Michx.) Gray, forma *cristata* (Maxon) Clute. I am, therefore, glad to state that it was collected in Sherborn, Mass., August 3, 1912. It was found growing with an abundance of the type near the edge of rocky, deciduous woods. A frond was placed with the Boston Society of Natural History as No. 1138 of the Flora of Sherborn, Mass.

The same report characterizes *Onoclea Struthiopteris* (L.) Hoffm. as "rare; not reported from south of Boston." The fact that this species was collected in Sherborn December 15, 16, 1912, may be of interest. The station was rather large, there being certainly thirty or more crowns which were growing on a rocky hill at the side of a shady cart-road which gives access to the orchards, woodlots, and pastures which border it. Of course at the time of collection the sterile leaves were dry and brown; but several mature fertile fronds were gathered and sent to the Gray Herbarium and to the Boston Society where they are numbered 1199 of the Flora of Sherborn.

Another interesting collection, July 16, 1911, was that of *Sagittaria graminea* Michx. on the shore of Farm Pond. Material sent to the Boston Society was identified by Dr. J. A. Cushman. This species is mentioned in RHODORA xii. 4, January (1910), as being reported from "scattered stations in northern half of district." The finding it at Sherborn, therefore, seems to show an extension of range.— MARTHA LOUISE LOOMIS, Sherborn, Massachusetts.

ALNUS CRISPA (Ait.) Pursh, var. **mollis** (Fernald), n. comb. *A. mollis* Fernald, RHODORA, vi. 162 (1904). Extended experiences in the field in New England, eastern Canada and Newfoundland during the past decade have convinced the writer that, although a well pronounced pubescent extreme of less boreal range than true *A. crispa*, *A. mollis* cannot be kept apart from the older species on any absolute characters and is better treated as a variety.— M. L. FERNALD, Gray Herbarium.

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